

Muscle toner to prevent and treat tension headaches, neck and shoulder pain, and snoring

DESCRIPTION

TECHNICAL FIELD OF INVENTION

This invention relates to fitness equipment in general, and more particularly relates to stretching device for arm, shoulder, upper chest, upper back, and neck muscle groups.

BACKGROUND OF INVENTION

Tension headache is attributed to muscle contraction exceeding the normal / physiological tonus, causing muscle tension and spasm. Tension-type headache was formerly described as muscle contraction headache. More than 90% of headaches are tension headaches, which become more frequent and severe with emotional and physical stress. Tension in the neck and shoulder area is the most common cause of headache.

Neck and shoulder pains occur as a result of neck injury, arthritis, and muscle tension. Pain on the top of the shoulder or in the neck is often due to the tension in the trapezius muscles, which run from the back of the head across the back of the shoulders.

Patients with clenching habit suffer from the muscle pain in the neck and shoulder area, extending to the back of the ears and scalp. Clenching is a stress related habit and is often caused by, or consequent to, pain in the neck and shoulder muscles. Recent research has confirmed close relationship between the previously described maxillary tender zone and migraine, tension-type headache, facial pain, cervical pain and muscle spasm.

Snoring is related to the obstruction of the upper airways and it is attributed to increased tone of striated muscle tensor veli palatini. Stimulation / contraction of genioglossus and geniohyoid muscles, which are the primary muscles involved in dilating upper airways, doubles the air volume by protruding the tongue and stops the snoring. This observation may suggest that main cause of snoring is decreased tonus in genioglossus and geniohyoid muscles rather than increased tension in tensor veli palatini.

Snoring habit, not related to anatomical deformities causing the obstruction, appears in the later age of the individuals with no history of snoring problem at their younger age. 25% of adults are habitual snorers. Although, hypertension or other systemic problems are found to be the causing factors but these conditions are not universal. Contraction of the primary muscles in dilating upper airway stops the snoring. These observations indicate that lowered muscle tonus is the causing factor for snoring in older individuals.

Muscle atrophy and degeneration, a prevalent age related phenomena, results in muscle weakness and decreased muscle tonus. Tonus herein refers to physiological muscle contraction in resting, which maintains normal posture. Regular exercise is important to prevent muscle

decline that leads to loss of muscle function. Stretching exercises stimulate the muscles, increasing their resilience and strength, and restoring physiological muscle tone.

Numerous medications and mechanical tools have been introduced for the treatment of tension headache, neck and shoulder pain, and snoring habit. However, concerns about the side effects of the medications and the inconvenience of wearing a cumbersome apparatus at day or the night time limits their use. Moreover, most existing treatment modalities are symptomatic, only masking the signs and symptoms of the morbid condition at best, and therefore they cannot be categorized as curative treatments. Muscle toner treats the tension headaches, neck and shoulder pains, and snoring, which are associated with muscle tension, muscle weakness, and altered musculature tone.

Muscle toner is a small, very light, and portable equipment and it is simple to use. Exercising with Muscle toner does not require any particular place or space. It could be exercised at any time/ any place, even at the office place when the tension may start to build up. Using the Muscle toner at early stage of tension headache breaks the chain reaction, which would otherwise result in excruciating headache and neck and shoulder pain. The practice takes between two to five minutes each time, to be repeated at intervals each day as needed. Multipurpose action of Muscle toner and its practicality and low cost, make it a desirable therapeutic tool in the treatment of tension headaches, neck and shoulder pain, and the snoring habit.

SUMMARY OF INVENTION

In accordance with the invention, a muscle toner is provided for the prevention and treatment of tension headache, neck and shoulder pains, and snoring. The simultaneous action of muscle toner on different muscle groups, affected by one or all of these ailing conditions, makes it a unique therapeutic tool.

The muscle toner of the invention includes a headband connected to a stretching device from its rear side, which corresponds to the back of the head. When the headband is looped around the head, the stretching device would be hanging down behind the neck. Different exercises are performed by stretching and up and down movements of the arms, while holding the handles of the stretching device from the back. The connecting point of the stretching device to the headband acts as a fulcrum and transfers the tension from generated stretch action to the neck, thus, activating all muscle groups in the arms, shoulders, upper chest, upper back, and in the neck areas simultaneously.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic drawing of the muscle toner, comprising; headband and stretching device

FIG. 2 is a schematic drawing of the strap, a component of the headband, FIG. 1

FIG. 3 is a schematic drawing of the male and female adhering materials, the components of the strap, FIG.4, a component of the headband, FIG. 1

FIG. 4 is a schematic drawing showing the female adhering material placed at the tip of the inner side of the strap, FIG. 2, a component of the headband, FIG. 1

FIG. 5 is a schematic drawing showing the male adhering material placed at the end of the outer side of the strap, FIG. 2, a component of the headband, FIG. 1

FIG. 6 is a schematic drawing of connecting strip, a component of the headband, FIGS.8, FIG. 1

FIG. 7 is a schematic drawing of connecting ring, a component of the headband, FIG. 8, FIG. 1

FIG. 8 is a schematic drawing showing the outer side of the strap, FIG. 2, with male adhering material, FIG. 5, connecting strip, FIG. 6, and connecting ring, FIG. 7, the components of the headband, FIG. 1

FIG. 9 is a schematic drawing of the stretching device, a component of the muscle toner, FIG. 1.

FIG. 10 is a schematic drawing of the elastic tube, a component of the stretching device, FIG. 9

FIG. 11 is a schematic drawing of the handle, a component of the stretching device, FIG.9

FIG. 12 is a schematic drawing of the padding over the handle, a component of the stretching device, FIG. 9

FIG. 13 is a schematic drawing of the length adjusting buckle, a component of the stretching device, FIG. 9

FIG. 14 is a schematic drawing of the elastic tube, FIG. 10, passing through the length adjusting buckle, FIG. 13, and through the lumen of the handle, FIGS. 11, 12, the components of the stretching device, FIG. 9

FIG. 15 is a schematic drawing showing the rear view of the stretched arms along the shoulders

FIG. 16 is a schematic drawing showing the side view of the stretched arms along the shoulders

FIG. 17 is a schematic drawing showing the arms position, pulling the head backward and stretching the neck

DETAILED DESCRIPTION OF THE INVENTION AND BEST MODE

The muscle toner of the present invention includes headband connected to stretching device FIG.1. The structure of the headband is shown in more detail in FIGS. 2, 3, 4, 5, 6, 7, and 8. FIGS. 9, 10, 11, 12, 13, and 14 show the details of the structure of the stretching device.

The headband comprises a strap FIG. 2. The adhering materials, FIG. 3, the female part is placed at the tip of the inner side, FIGS. 4, and the male part is placed at the end of the outer side of the strap, FIG. 5. The adhering materials provide the grip action for tightening and holding the headband. A connecting strip, FIG. 6, from a suitable material is swan at its sides to the center part of the outer side of the strap, FIG. 2, leaving the middle section of the connecting strip detached FIG. 8. A connecting ring, FIG. 7, loops under the connecting strip, FIG. 8, to hold the elastic tube of the stretching device, FIG. 1.

The stretching device, FIG. 9, is composed of an elastic tube, FIG.10, two hollow and cylindrical handles, FIG. 11, covered by padding material, FIG. 12, two length adjusting buckle, FIG. 13. The elastic tube, FIG. 10, is fixed or tied on the adjusting buckle, runs through the lumen of the handle, passes over and under the length adjusting buckle, FIG. 14, inserted through the connecting ring of the headband, FIG. 1, and continues to the other handle and is tied to the length adjusting buckle at the end, FIG. 9.

The user can adjust the length of the elastic tube, FIG. 10, by forward and backward movement of the length adjusting buckle, FIG. 13, along the elastic tube. The length adjustment helps to size it up to the users arm span and to reduce or increase the resistance of the elastic tube for stretching.

Basically, when the arms are stretched along the shoulders from the back of the body, FIG. 15, FIG. 16, biceps and triceps muscles in the arms, pectoralis muscle over the chest, the trapezius and rhomboid muscles in upper back which extend toward the back of the shoulders and back of the neck, along with the muscles in the front of the neck are stretched together. Deltoids are stretched when the arms are moved down or back and forth.

Stretching of all muscle groups in the neck and shoulder area has a secondary pulling effect on deeper structures in the neck area and head, and facial muscles, thereby reducing their tension. Similarly, stretching the arms horizontally along the shoulders, FIGS. 15, and 16, has pulling effect on the rib muscles, which would expand the lungs, increasing their volume. Therefore, such exercise stimulates breathing, which is noticeably compromised under the stress conditions. Combined effects of the increased oxygen intake, easing the tensions in the muscles, which would promote dilation of the blood vessels in the area, is the key factor to alleviate both the neck / shoulder pain and tension headache, induced by stress.

Needless to emphasize that stretch exercise effectively strengthens the muscles and prevents the onset, or slows down the progress, of muscle degeneration/ atrophy, which is prevalent among the elderly. Muscle weakness is underlying factor for snoring habit in older age.

By stretching the arms toward the back and down the head will be pulled back, stretching primarily the muscle groups in the front part of the neck and under the chin, FIG. 17. The stretch action generated by this exercise will strengthen and restore the physiological tonus in all the muscle groups in the area including the soft palate muscles. It has been shown that the increase or the reduction of the muscle tone of the soft palate muscles; tensor veli palatini, pterygoid, genioglossus, geniohyoid, and sternohyoid, are the main cause of snoring, US patent: 6,573,241 and 6,587,725. Muscle toner, by its stretch mechanism restores the physiological function of these muscle groups, thereby eliminating the snoring problem.

Although the invention has been described above with a certain degree of particularity with respect to the components and arrangements thereof, it should be understood that this disclosure has been made by way of example only. Consequently, changes in the detail of the construction and in the arrangement of the elements will be apparent to those familiar with the art, and may be made to without departing from the meaning, scope, or intent of the invention as claimed below: